What is claimed is:

1. A method of computing a distance measure between first and second mixture type probability distribution functions,

$$G(x) = \sum_{i=1}^{N} \mu_i g_i(x), \qquad H(x) = \sum_{k=1}^{K} \gamma_k h_k(x),$$

comprising the step of evaluating the equation:

$$D_M(G,H) = \min_{w=[\omega_{ik}]} \sum_{i=1}^{N} \sum_{k=1}^{K} \omega_{ik} d(g_i, h_k),$$

where $d(g_i, h_k)$ is a function of the distance between a component, g_i, of the first probability distribution function and a component, h_k, of the second probability distribution function

where

$$\sum_{i=1}^{N} \mu_i = 1 \ \ and \ \sum_{k=1}^{K} \gamma_k = 1.$$

and

$$\omega_{ik} \geq 0, \ \ 1 \leq i \leq N, 1 \leq k \leq K$$

and

$$\sum_{k=1}^{K} \omega_{ik} = \mu_i, 1 \leq i \leq N, \sum_{i=1}^{N} \omega_{ik} = \gamma_k, 1 \leq k \leq K.$$

2. The method according to claim 1 wherein at least one of said first and second mixture probability distribution functions includes a Gaussian Mixture Model.

3. The method according to claim 1 wherein the element distance between the first and second probability distance functions includes Kullback Leibler Distance.

4. The method of claim 1 wherein the first and second probability distribution functions are Gaussian mixture models derived from audio segments.

5. A computer program embedded in a storage medium for computing a distance measure between first and second mixture type probability distribution functions,

$$G(x) = \sum_{i=1}^{N} \mu_i g_i(x), \qquad H(x) = \sum_{k=1}^{K} \gamma_k h_k(x),$$

in accordance with the equation:

$$D_M(G,H) = \min_{w=[\omega_{ik}]} \sum_{i=1}^{N} \sum_{k=1}^{K} \omega_{ik} d(g_i, h_k),$$

where $d(g_i, h_k)$ is a function of the distance between a component, g_i, of the first probability distribution function and a component, h_k, of the second probability distribution function

where

$$\sum_{i=1}^{N} \mu_i = 1 \ \ and \ \sum_{k=1}^{K} \gamma_k = 1.$$

and

$$\omega_{ik} \geq 0, \ 1 \leq i \leq N, 1 \leq k \leq K$$

and

$$\sum_{k=1}^{K} \omega_{ik} = \mu_i, 1 \leq i \leq N, \sum_{i=1}^{N} \omega_{ik} = \gamma_k, 1 \leq k \leq K.$$

6. The computer program according to claim 5 wherein at least one of said first and second mixture probability distribution functions includes a Gaussian Mixture Model.

7. The computer program according to claim 5 wherein the element distance between the first and second probability distance functions includes Kullback Leibler Distance.

8. The computer program of claim 5 wherein the first and second probability distribution functions are Gaussian mixture models derived from audio segments.

9. A computer system for computing a distance measure between first and second mixture type probability distribution functions,

$$G(x) = \sum_{i=1}^{N} \mu_i g_i(x), \qquad H(x) = \sum_{k=1}^{K} \gamma_k h_k(x),$$

in accordance with the equation:

$$D_M(G,H) = \min_{w=[\omega_{ik}]} \sum_{i=1}^{N} \sum_{k=1}^{K} \omega_{ik} d(g_i, h_k),$$

where $d(g_i, h_k)$ is a function of the distance between a component, g_i, of the first probability distribution function and a component, h_k, of the second probability distribution function

where

$$\sum_{i=1}^{N} \mu_i = 1 \ \ and \ \sum_{k=1}^{K} \gamma_k = 1.$$

and

$$\omega_{ik} \geq 0, \ 1 \leq i \leq N, 1 \leq k \leq K$$

and

$$\sum_{k=1}^{K} \omega_{ik} = \mu_i, 1 \le i \le N, \sum_{i=1}^{N} \omega_{ik} = \gamma_k, 1 \le k \le K.$$

10. The computer system according to claim 9 wherein at least one of said first and second mixture probability distribution functions includes a Gaussian Mixture Model.

11. The computer system according to claim 9 wherein the element distance between the first and second probability distance functions includes Kullback Leibler Distance.

12. The computer system of claim 9 wherein the first and second probability distribution functions are Gaussian mixture models derived from audio segments.

13. A method for computing a distance measure between first and second mixture type probability distribution functions G and H, wherein:

$$G(x) = \sum_{i=1}^{N} \mu_i g_i(x),$$

wherein μ_i is a weight imposed on a component, $g_i(x)$, of the first probability distribution function and

$$H(x) = \sum_{k=1}^{K} \gamma_k h_k(x),$$

wherein γ_k is a weight imposed on a component h_k, of the second probability distribution function comprising the steps of:

computing an element distance, $d(g_i, h_k)$, between each g_I and each h_k where $1 \le i \le N, 1 \le k \le K$,

computing an overall distance, denoted by $D_M(G,H)$, between the first mixture probability distribution function, G, and the second mixture probability distribution function, H, based on a weighted sum of the all element distances,

$$\sum_{i=1}^{N}\sum_{k=1}^{K}\omega_{ik}d(g_i,h_k),$$

wherein weights $\omega_{i,k}$ imposed on the element distances $d(g_i, h_k)$, are chosen so that the overall distance $D_M(G,H)$ is minimized and

$$\omega_{ik} \geq 0, \quad 1 \leq i \leq N, 1 \leq k \leq K$$

$$\sum_{i=1}^{N}\omega_{ik} = \gamma_k, 1 \leq k \leq K, \quad and$$

$$\sum_{k=1}^{K}\omega_{ik} = \mu_i, 1 \leq i \leq N.$$

14. The method according to claim 13 wherein at least one of said first and second mixture probability distribution functions includes a Gaussian Mixture Model.

15. The method according to claim 13 wherein the element distance between the first and second probability distance functions includes Kullback Leibler Distance.

16. The method of claim 13 wherein the first and second probability distribution functions are Gaussian mixture models derived from audio segments.